SIDING HAVING BACKER WITH FEATURES FOR DRAINAGE, VENTILATION, AND RECEIVING ADHESIVE

This application claims the priority benefit of U.S. Provisional Application No. 60/640,158, filed Dec. 29, 2004, which is hereby incorporated by reference in its entirety. This application is also a continuation-in-part of U.S. application Ser. No. 11/234,073, filed Sep. 23, 2005, which is a continuation-in-part of U.S. application Ser. No. 10/688,750, now abandoned, filed Oct. 17, 2003, each of which is also hereby incorporated by reference in its entirety.

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates generally to panels, such as vinyl siding, cellulosic composite siding, and fiber cement siding, and more particularly to panels having backers applied thereto, such backers for example comprising foam material. Examples of panels that may benefit from the present invention include siding panels, wall panels, and other similar, suitable, or conventional types of panels for building structures.

This application incorporates by reference U.S. Pat. No. 6,321,500 as background for the present application. By way of background, in order to enhance the thermal insulation of building structures, it is known to provide one or more layers or panels of insulating material between the vinyl facing panel and the building structure. The backing may also improve the structural characteristics of the siding panel. Known insulated siding systems exist in many different forms. For instance, it is known to nail large sheets of insulating material to the building structure and then install the siding over the insulating material. Another system places a panel of insulation material in a slot behind the vinyl facing panel. Yet another system pours foam filler into the back of a vinyl facing panel such that the foam filler conforms to the geometry of the vinyl facing panel.

The present invention provides an improved backer for use with panels. Exemplary embodiments of the present invention may include one or more new features not present in prior backers.

First, one or more "valleys" or recesses may be formed in a first side of the backer which adheres to the siding. These valleys may be useful for providing increased surface area in which glue or other adhesive can flow and thereby increase the adhesion strength of the backer to the siding panel.

Second, one or more ridges may be formed in a second side of the backer which is facing the wall of a building structure upon which the siding is being applied. The ridges may protrude slightly from the second side of the backer to create ventilation space between the non-ridged areas of the second side of the backer and the wall. Providing for ventilation may help to prevent or limit any accumulation of moisture between the wall and the backer.

Third, a mating recess may be formed in an end of the backer so that an adjacent siding panel with backer can be overlapped more easily. In this manner, better fitting seams may be formed between adjacent panels.

The present invention may be an improvement over known backing systems. One exemplary embodiment of the present invention may provide a siding unit, which is comprised of backing and a facing panel. Some of the advantages of the backed siding may include improved energy efficiency, reduced air infiltration, reduced curvature in the siding panels, and increased ease of installation. In addition, one

embodiment of the backed siding of the present invention may have improved interlocking pieces and improved backing.

In addition to the novel features and advantages mentioned above, other features and advantages of the present invention will be readily apparent from the following descriptions of the drawings and exemplary embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevation view of an assembly including a first backed siding unit.

FIG. **2** is a side elevation view of the siding unit shown in FIG. **1**.

FIG. **3** is a side elevation view of an assembly including a second siding unit.

FIG. **4** is a side elevation view of an assembly including a third siding unit.

FIG. **5** is a side elevation view of a wall panel unit.

FIG. **6** is a side elevation view of another wall panel unit.

FIG. **7** is a cross-sectional view of an assembly of paneling units of FIG. **6**.

FIG. **8** is a cross-sectional view of a designated portion of FIG. **7**.

FIG. **9** is a side elevation view of a third wall panel unit.

FIG. **10** is a partial side elevation view of an assembly including the paneling units shown in FIG. **9**.

FIG. **11** is a side elevation view of a fourth wall panel unit.

FIG. **12** is a rear elevation view of an exemplary embodiment of a paneling unit of the present invention.

FIG. **13**A is a sectional view taken along section **13**A-**13**A of FIG. **12**, more clearly showing features of an exemplary embodiment of the present invention.

FIG. **13**B is a partial sectional view of the first side of the backer of FIG. **12**, more clearly showing features of an exemplary embodiment of the present invention.

FIG. **14** is a side elevation view of an exemplary embodiment of a backer for a paneling unit of the present invention.

FIG. **15** is a rear elevation view of an exemplary embodiment of a paneling unit of the present invention.

FIG. **16** is a side elevation view of an exemplary embodiment of an entire paneling unit that includes a relief zone.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENT(S)

The present invention is directed to a backed paneling unit. FIGS. **1** through **11** illustrate exemplary embodiments of a paneling unit that may incorporate features of the present invention. FIGS. **1** and **2** show a siding unit **10** with two rows of siding. Nevertheless, it should be understood that a paneling unit of the present invention may be manufactured with any desired number of rows.

In FIGS. **1** and **2**, the siding unit **10** includes backing portion **20** ("backer") and at least one facing or cover panel or portion **30** ("siding panel"). For example, the backing portion **20** may be comprised of a base of either expanded or extruded polystyrene foam. However, it should be recognized that the backing portion **20** may be comprised of any sufficiently rigid material, including, but not limited to, foam, fiberglass, cardboard, and other similar, suitable, or conventional materials. Any suitable means may be used to obtain the shape of the backing portion **20**. In an exemplary embodiment, the shape of the backing portion **20** may be obtained by extrusion through a predetermined die configuration and/or by cutting such as with a power saw or other cutting devices.